

REMARKS

Entry and consideration of this amendment and accompanying remarks is respectfully requested. The present application has been reviewed in light of the Final Office Action mailed June 17, 2008.

In the Final Office Action of June 17, 2008, the Examiner: (1) maintained the rejection of claims 1-6, 8-9, 15-18, 20-22 and 24 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 4,804,691 to English et al. (hereinafter English); (2) maintained the rejection of claim 23 under 35 U.S.C. §103(a) as obvious over English in view of U.S. Patent No. 6,339,130 to Bennett et al. (hereinafter Bennett); and (3) maintained the rejection of claims 1-9, 13-22, and 24 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 4,057,535 to Lipatova et al. (hereinafter Lipatova) in view of English and U.S. Patent No. 4,388,245 to Ueyanagai et al. (hereinafter Ueyanagai). These rejections are respectfully traversed.

With respect to the rejection of claims 1-6, 8-9, 15-18, 20-22 and 24 under 35 U.S.C. §103(a) as obvious over English, nowhere does English disclose or suggest a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate as recited in claim 1.

As admitted by the Examiner, nowhere does English disclose or suggest the use of di- and tri-functional compounds. English provides an adhesive formed by reacting a biodegradable monomer with a polyhydroxy polymerization initiator in the presence of a catalyst and preparing a diisocyanate-terminated prepolymer adhesive by reacting the resulting hydroxyl-terminated polyester with excess aromatic diisocyanate. Where the

prepolymer is utilized as a single-component system, the diisocyanate is reacted with the hydroxyl-terminated polyester, whereupon the resulting isocyanate prepolymer is applied to soft tissue, with water from the soft tissue forming carbon dioxide and an amine. The amine may then react with another isocyanate group to promote chain growth and cross linking through urea linkages. Where a two-component system is utilized, the components are kept separate until just prior to use, with the hydroxyl-terminated prepolymer combined with the diisocyanate just prior to application to tissue.

As previously noted, nowhere is there any teaching or suggestion in English of a composition including a bioabsorbable oligomeric compound that is end-capped with 3 components, namely an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate as recited in claim 1. The recited compositions include 3 components; English only possesses, at most, 2. The Examiner has thus failed to establish a *prima facie* case of obviousness and is using applicants' own disclosure, plus impermissible hindsight, to suggest that it would be obvious to modify English to include all 3 components in its "single component" or "two-component" systems. Thus, English cannot render claim 1 obvious, nor claims 2-6, 8-9, 15-18, 21-22 and 24 which depend directly or indirectly from claim 1 and incorporate all of its limitations therein.

With respect to claim 20, English nowhere discloses or suggests a method which includes applying to tissue a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate, and crosslinking the composition. As noted above with respect to claim 1, nowhere does

English disclose or suggest applying to a tissue a composition including the 3 separate components, i.e., a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate. Without such teaching or suggestion, English cannot render claim 20 obvious.

With respect to the rejection of claim 23 as obvious over English in view of Bennett, claim 23 depends indirectly from claim 1 and incorporates all of its limitations therein. As described above, English does not render claim 1 obvious. Bennett fails to remedy the deficiencies of English, no matter how these references may be combined.

Nowhere does Bennett disclose a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate as recited in claim 1. While Bennett's star polymers may be endcapped with isocyanates, there is no disclosure of the recited composition including its 3 components. That Bennett may use similar cure characteristics and catalysts does not alter the fact that it does not disclose or suggest the recited compositions. Thus, Bennett cannot render obvious the pending claims, and it is respectfully submitted that claim 23 is patentable over English and Bennett, no matter how these references may be combined.

With respect to the rejection of claims 1-9, 13-22 and 24 under 35 U.S.C. §103(a) as obvious over Lipatova in view of English and in view of Ueyanagi, nowhere does Lipatova disclose or suggest a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate as recited

in claim 1. Nor does Lipatova disclose or suggest a method which includes applying to tissue a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate, and crosslinking the composition as recited in claim 20.

Similarly, nowhere does Lipatova disclose or suggest a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, wherein the bioabsorbable oligomeric compound has the structure:



wherein A is a bioabsorbable group derived from a monomer selected from the group consisting of glycolic acid, glycolide, lactic acid, lactide, 1,4-dioxane-2-one, 1,3-dioxane-2-one and ϵ -caprolactone, n is from about 1 to about 6 and X is a residue from a multifunctional initiator selected from the group consisting of ethylene glycol, diethylene glycol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,10-decanediol, 1,12-dodecanediol, 1,2-decanediol, 1,2-dodecanediol, 1,2-hexadecanediol, 3-methyl-1,5-pentanediol, 2-methyl-1,3-propanediol, 2-butyl-2-ethyl-1,3-propanediol, 2-ethyl-3-butyl-1,3-propanediol, 2-ethyl-1,6-hexanediol, glycerol, 1,1,1-trimethylolpropane, neopentyl glycol, pentaerythritol, triethanolamine, 1-aminopropanols, 2-aminopropanols, 2-aminobutanols, 4-aminobutanols, succinic acid, glutaric acid, adipic acid, suberic acid, sebacic acid, dodecanedioic acid, 2-ethyl-2-methylsuccinic acid, phthalic acid, isophthalic acid, and terephthalic acid; a trifunctional compound that is end-capped with an aromatic diisocyanate, wherein the trifunctional compound is selected from the group consisting of glycerol, 1,1,1-trimethylolpropane,

triethanolamine, 1-aminopropanols, 2-aminopropanols, 2-aminobutanols, and 4-aminobutanols; and an aromatic diisocyanate selected from the group consisting of 1,4-diisocyanatobenzene, 1,1'-methylenebis[4-isocyanatobenzene], 2,4-diisocyanato-1-methylbenzene, 1,3-diisocyanato-2-methylbenzene, 1,5-diisocyanatonaphthalene, 1,1'-(1-methylethylidene)bis[4-isocyanatobenzene] and 1,3- and 1,4-bis(1-isocyanato-1-methylethyl)benzene, as recited in claim 19.

Rather, Lipatova discloses an adhesive including aromatic diisocyanates, macrodiisocyanates of a defined formula, and 2,4,6-tris(dimethylaminomethyl)phenol. Nowhere in Lipatova is there any teaching or suggestion of a trifunctional compound that is end-capped with an aromatic diisocyanate. In fact, as admitted by the Examiner, Lipatova does not disclose bioabsorbable polyesters and trifunctional adducts of the aromatic polyisocyanate. Without such disclosure, Lipatova cannot anticipate or render obvious the pending claims including independent claims 1, 19, and 20. As claims 2-9, 13-18, 21-22 and 24 all depend, directly or indirectly, from claim 1 and incorporate all of its limitations therein, Lipatova similarly cannot render obvious those claims.

English fails to remedy the deficiencies of Lipatova, no matter how these references may be combined. As noted above, nowhere does English disclose or suggest a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate as recited in claim 1. In addition, nowhere does English disclose or suggest a method which includes applying to tissue a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic

diisocyanate, and an aromatic diisocyanate, and crosslinking the composition as recited in claim 20.

Similarly, nowhere does English disclose or suggest a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, wherein the bioabsorbable oligomeric compound has the structure:



wherein A is a bioabsorbable group derived from a monomer selected from the group consisting of glycolic acid, glycolide, lactic acid, lactide, 1,4-dioxane-2-one, 1,3-dioxane-2-one and ϵ -caprolactone, n is from about 1 to about 6 and X is a residue from a multifunctional initiator selected from the group consisting of ethylene glycol, diethylene glycol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,10-decanediol, 1,12-dodecanediol, 1,2-decanediol, 1,2-dodecanediol, 1,2-hexadecanediol, 3-methyl-1,5-pentanediol, 2-methyl-1,3-propanediol, 2-butyl-2-ethyl-1,3-propanediol, 2-ethyl-3-butyl-1,3-propanediol, 2-ethyl-1,6-hexanediol, glycerol, 1,1,1-trimethylolpropane, neopentyl glycol, pentaerythritol, triethanolamine, 1-aminopropanols, 2-aminopropanols, 2-aminobutanols, 4-aminobutanols, succinic acid, glutaric acid, adipic acid, suberic acid, sebacic acid, dodecanedioic acid, 2-ethyl-2-methylsuccinic acid, phthalic acid, isophthalic acid, and terephthalic acid; a trifunctional compound that is end-capped with an aromatic diisocyanate, wherein the trifunctional compound is selected from the group consisting of glycerol, 1,1,1-trimethylolpropane, triethanolamine, 1-aminopropanols, 2-aminopropanols, 2-aminobutanols, and 4-aminobutanols; and an aromatic diisocyanate selected from the group consisting of 1,4-diisocyanatobenzene, 1,1'-methylenebis[4-isocyanatobenzene], 2,4-diisocyanato-1-

methylbenzene, 1,3-diisocyanato-2-methylbenzene, 1,5-diisocyanatonaphthalene, 1,1'-(1-methylethylidene)bis[4-isocyanatobenzene) and 1,3- and 1,4-bis(1-isocyanato-1-methylethyl)benzene, as recited in claim 19.

As noted above, nowhere is there any teaching or suggestion in English of a composition or method of applying a composition including the 3 separate components recited in claims 1, 19 and 20.

The Examiner has taken the position that Lipatova and English are analogous art and cannot be attacked individually, as the rejection is based on the combination of references; however, there must be some teaching, suggestion, motivation, or similar reason for one skilled in the art to combine the references as suggested by the Examiner. English does not provide the recited multi-component composition; neither does Lipatova. Moreover, Lipatova's composition, as noted above, is not bioabsorbable. Thus, for at least the foregoing reasons, one skilled in the art would not look to combine the two references as suggested by the Examiner. Thus neither reference, taken alone or in any combination, render obvious the pending claims.

Uenayagi similarly fails to remedy the deficiencies of Lipatova and English, no matter how these references may be combined. Nowhere does Uenayagi disclose or suggest a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate as recited in claim 1.

Similarly, nowhere does Uenayagi disclose or suggest a method which includes applying to tissue a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped

with an aromatic diisocyanate, and an aromatic diisocyanate, and crosslinking the composition as recited in claim 20.

Moreover, nowhere does Uenayagi disclose or suggest a composition including a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, wherein the bioabsorbable oligomeric compound has the structure:



wherein A is a bioabsorbable group derived from a monomer selected from the group consisting of glycolic acid, glycolide, lactic acid, lactide, 1,4-dioxane-2-one, 1,3-dioxane-2-one and ϵ -caprolactone, n is from about 1 to about 6 and X is a residue from a multifunctional initiator selected from the group consisting of ethylene glycol, diethylene glycol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,10-decanediol, 1,12-dodecanediol, 1,2-decanediol, 1,2-dodecanediol, 1,2-hexadecanediol, 3-methyl-1,5-pentanediol, 2-methyl-1,3-propanediol, 2-butyl-2-ethyl-1,3-propanediol, 2-ethyl-3-butyl-1,3-propanediol, 2-ethyl-1,6-hexanediol, glycerol, 1,1,1-trimethylolpropane, neopentyl glycol, pentaerythritol, triethanolamine, 1-aminopropanols, 2-aminopropanols, 2-aminobutanols, 4-aminobutanols, succinic acid, glutaric acid, adipic acid, suberic acid, sebacic acid, dodecanedioic acid, 2-ethyl-2-methylsuccinic acid, phthalic acid, isophthalic acid, and terephthalic acid; a trifunctional compound that is end-capped with an aromatic diisocyanate, wherein the trifunctional compound is selected from the group consisting of glycerol, 1,1,1-trimethylolpropane, triethanolamine, 1-aminopropanols, 2-aminopropanols, 2-aminobutanols, and 4-aminobutanols; and an aromatic diisocyanate selected from the group consisting of 1,4-diisocyanatobenzene, 1,1'-methylenebis[4-isocyanatobenzene], 2,4-diisocyanato-1-

methylbenzene, 1,3-diisocyanato-2-methylbenzene, 1,5-diisocyanatonaphthalene, 1,1'-(1-methylethylidene)bis[4-isocyanatobenzene) and 1,3- and 1,4-bis(1-isocyanato-1-methylethyl)benzene, as recited in claim 19.

While Uenayagi discloses processes for preparing modified aliphatic, alicyclic, or araliphatic organic polyisocyanates, which include prepolymers that may be dimers, trimers, tetramers, pentamers, or mixtures thereof, its processes include heating a polyisocyanate having at least two isocyanate groups in the presence of a diisocyanate monomer to form the modified polyisocyanate. Nowhere is there any teaching or suggestion of a composition including the three components recited in claims 1 and 19, namely, a bioabsorbable oligomeric compound that is end-capped with an aromatic diisocyanate, a trifunctional compound that is end-capped with an aromatic diisocyanate, and an aromatic diisocyanate. Moreover, the compositions of Uenayagi are utilized as coating materials, non-yellowing foams, and non-yellowing adhesives (see, e.g., column 3, lines 17-25). Nowhere is there any teaching or suggestion of applying such a composition to tissue as recited in claim 20. Without such teaching or suggestion, Uenayagi fails to remedy the deficiencies of Lipatova and/or English, no matter how these references may be combined.

Again, there must be some teaching, suggestion or motivation to combine the references as suggested by the Examiner. One skilled in the art would not look to combine Lipatova, English and Uenayagi as suggested by the Examiner. The Examiner has engaged in impermissible hindsight in taking the applicants' own disclosure to provide the suggestion for combining the references and rejecting the claims. Thus,

claims 1-9, 13-22 and 24 are patentable over Lipatova, English, and/or Uenayagi, and withdrawal of this rejection is respectfully requested.

It is believed that the claims of the application as now presented, i.e., claims 1-9, and 13-24, are patentably distinct over the art of record and are in condition for allowance. In the event that the Examiner believes that a telephone conference or a personal interview may facilitate resolution of any remaining matters, the undersigned may be contacted at the number indicated below. Early and favorable reconsideration of this application is respectfully requested.

Respectfully submitted,



Michael R. Brew
Reg. No. 43,513
Attorney for Applicants

CARTER, DELUCA, FARRELL & SCHMIDT, LLP
445 Broad Hollow Road - Suite 225
Melville, New York 11747
(631) 501-5700
(631) 501-3526 (fax)
MRB/nr